

=> d his

(FILE 'HOME' ENTERED AT 16:20:58 ON 09 APR 2003)

FILE 'CA' ENTERED AT 16:21:04 ON 09 APR 2003

L1            26236 S MANNITOL  
L2            99174 S ANTIODIXANT  
L3            603 S L1 AND L2  
L4            3038 S MANNITOL/TI  
L5            24396 S ANTIODIXANT/TI  
L6            2 S L4 AND L5  
L7            76 S L1 (3A) L2  
L8            355424 S DEXTROSE OR GLUCOSE  
L9            133762 S ATP  
L10          14444 S L8 AND L9  
L11          170925 S ORGAN  
L12          257 S L11 AND L10  
L13          47850 PERfusion OR PERfuse  
L14          21 S L13 AND L12  
L15          236 S L12 NOT L14  
L16          261983 HEART  
L17          68 S L16 AND L15

=> log hold  
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
155.66	155.87

FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
-19.22	-19.22

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

CA SUBSCRIBER PRICE

SESSION WILL BE HELD FOR 60 MINUTES  
STN INTERNATIONAL SESSION SUSPENDED AT 16:47:24 ON 09 APR 2003

=> d his

(FILE 'HOME' ENTERED AT 12:42:06 ON 09 APR 2003)

FILE 'WPIDS' ENTERED AT 12:42:14 ON 09 APR 2003

L1 25991 S ORGAN  
L2 16342 S TRANSPLANT?  
L3 2948 S PERfusion OR PERfuse  
L4 3043 S PERfusing OR L3  
L5 197 S L1 AND L2 AND L4

FILE 'CA' ENTERED AT 13:50:31 ON 09 APR 2003

L6 501 S L1 AND L2 AND L4  
L7 2876313 S TEMPERATURE  
L8 57 S L6 AND L7

=> log hold  
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
67.37	324.12

FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
-8.68	-8.68

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

CA SUBSCRIBER PRICE  
SESSION WILL BE HELD FOR 60 MINUTES  
STN INTERNATIONAL SESSION SUSPENDED AT 14:03:36 ON 09 APR 2003

8 ANSWER 26 OF 57 CA COPYRIGHT 2003 ACS

AN 128:43875 CA  
TI Solution and process for resuscitation and reparation of ischemically

damaged tissue

IN Brasile, Lauren

PA Breonics, Inc., USA

SO PCT Int. Appl., 44 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9743899	A1	19971127	WO 1997-US8205	19970516
W: AU, CA, CN, JP, RU				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2255657	AA	19971127	CA 1997-2255657	19970516
AU 9730671	A1	19971209	AU 1997-30671	19970516
AU 723424	B2	20000824		
CN 1226132	A	19990818	CN 1997-195768	19970516
EP 1021084	A1	20000726	EP 1997-925571	19970516
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
IE, FI				
JP 20000511531	T2	20000905	JP 1997-542527	19970516
JP 1996-649200	A	19960517		
WO 1997-US8205	W	19970516		

PRAI A process and resuscitation soln. are disclosed for inducing repair of ischem. damaged organs and tissues, to the degree that impairment of function can be reversed; and preventing further tissue damage during restoration of the circulation of the treated organ or tissue. The process comprises flushing the organ with the resuscitation soln. of the invention at a warm temp. of approx. 28-37.degree.C to remove accumulated blood and acidic products from blood flow deprivation; and perfusing the flushed organ or tissue with the resuscitation soln., wherein the soln. contains a novel combination of components to provide for (i) dilating of the blood vessels within the organ or tissue, (ii) reestablishing organ or tissue function by supplying trophic factors, (iii) restoring cellular integrity and function to the ischem. damaged organ or tissue, and (i.v.) reestablishing oxidative metab. by readapting the ischem. damaged organ or tissue, surviving by anaerobic respiration, to an oxygenated resuscitation soln.

=> d his

(FILE 'HOME' ENTERED AT 12:42:06 ON 09 APR 2003)

FILE 'WPIDS' ENTERED AT 12:42:14 ON 09 APR 2003

L1 25991 S ORGAN  
L2 16342 S TRANSPLANT?  
L3 2948 S PERfusion OR PERfuse  
L4 3043 S PERfusing OR L3  
L5 197 S L1 AND L2 AND L4

=> log hold  
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
256.54	256.75

FULL ESTIMATED COST

SESSION WILL BE HELD FOR 60 MINUTES  
STN INTERNATIONAL SESSION SUSPENDED AT 13:06:37 ON 09 APR 2003

L8 ANSWER 50 OF 57 CA COPYRIGHT 2003 ACS

AN 111:74399 CA  
TI Total organ perfusion system  
IN Owen, Donald R.  
PA Tops Systems, Inc., USA  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2

DT Patent  
LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8805261	A1	19880728	WO 1988-US103	19880115
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				

PRAI US 1987-4092

AB A total perfusion system for extracorporeal maintenance of an organ for transplantation uses an oxygenated fluorocarbon primary perfusion emulsion to feed nutrients to and remove waste products from the organ. The system maintains the appropriate temp., pressure, O concn., and pH of the nutrient fluid. The waste fluid is filtered and recycled. A surgically removed dog heart was perfused normothermically with FC-43 emulsion (a com. perfluorocarbon artificial blood) for 1 h before and after a 24-h hypothermic electrolyte perfusion. The perfused heart exhibited excellent ventricular contractility under normothermic conditions after 24 h, and showed very little damage or edema.

AN 1361275701 CA  
 TI Apparatus and method for maintaining and/or restoring viability of  
 organs  
 IN Owen, Donald R.; Kravitz, David C.; Brassil, John; Brockbank, Kelvin G.  
 M.; Burroughs, Andrew; Isaacs, Dickon; Steibel, Dennis J.; Fraser,  
 Richard; Harris, Stanley; Schein, Douglas  
 PA Organ Recovery Systems Inc., USA  
 SO PCT Int. Appl., 112 pp.  
 CODEN: PIXXD2

DT Patent  
 LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002026034	A2	20020404	WO 2001-US26591	20010827
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TU, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

AU 2001086777 A5 20020408 AU 2001-86777 20010827

PRAI US 2000-645525 A 20000825

WO 2001-US26591 W 20010827

AB An organ perfusion app. and method monitor, sustain and/or restore viability of organs and preserver organs for storage and/or transport. Other app. include an organ transporter, an organ cassette and an organ diagnostic device. The method includes perfusing the organ at hypothermic and/or normothermic temps., preferably after hypothermic organ flushing for organ transport and/or storage. The method can be practiced with prior or subsequent static or perfusion hypothermic exposure of the organ. Organ viability is restored by restoring high energy nucleotide (e.g., ATP) levels by perfusing the organ with a medical fluid, such as an oxygenated cross-linked Hb-based bicarbonate medical fluid, at normothermic temps. In perfusion, organ perfusion pressure is preferably controlled in response to a sensor disposed in an end of tubing placed in the organ, by a pneumatically pressurized medical fluid reservoir, providing perfusion pressure fine tuning, over pressurization preventing and emergency flow cut-off. In the hypothermic mode, the organ is perfused with a medical fluid, preferably a simple crystalloid soln. contg. antioxidants, intermittently or in slow continuous flow. The medical fluid may be fed into the organ from an intermediary tank having a low pressure head to avoid organ over pressurization. Preventing over pressurization prevents or reduces damage to vascular endothelial lining and to organ tissue in general. Viability of the organ may be automatically monitored, preferably by monitoring characteristics of the medical fluid perfusate. The perfusion process can be automatically controlled using a control program.

*Related Case*

AN 132:248273 CA  
 TI Apparatus and method for maintaining and/or restoring viability of  
 organs  
 IN Owen, Donald R.; Kravitz, David C.  
 PA Life Science Holdings, Inc., USA  
 SO PCT Int. Appl., 55 PP.  
 CODEN: PIIXXD2

*See Search Report attached*  
*McNamee, Daren J. AM'*

DT Patent  
 LA English

PAN.CNT	1	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI		WO 2000018226 ✓	A2	20000406	WO 1999-US22582	19990929
		WO 2000018226	A3	20000525		
		W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
		CA 2342944	AA	20000406	CA 1999-2342944	19990929
		AU 9962748	A1	20000417	AU 1999-62748	19990929
		EP 1117293	A2	20010725	EP 1999-949991	19990929
		R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
		JP 2002525290	T2	20020813	JP 2000-571754	19990929
PRAI US	1998-162128	A		19980929		
	WO 1999-US22582	W		19990929		
AB	An organ perfusion app. and method for monitoring, sustaining and/or restoring the viability of the organ and for preserving the organ for storage and/or transport perfuse the organ at normothermic temps. (normothermic perfusion mode), preferably prior to and followed by organ perfusion at hypothermic temps. by (hypothermic perfusion mode) for transport and/or storage of the organ. The restoring of organ viability is accomplished by restoring high energy nucleotide (e.g., ATP) levels in the organ, which were reduced by warm ischemia time, by perfusing the organ with a medical fluid, such as an oxygenated cross-linked Hb-based bicarbonate medical fluid, at normothermic temps. In the normothermic perfusion mode, organ perfusion pressure is preferably controlled in response to a sensor disposed in an end of tubing placed in the organ, by a pneumatically pressurized medical fluid reservoir which may be used in combination with a stepping motor/cam valve which provides for perfusion pressure fine tuning, preventing over-pressurization and providing emergency flow cut-off. In the hypothermic mode, the organ is perfused with a medical fluid, preferably a simple crystalloid soln. augmented with antioxidants, intermittently or at a slow continuous flow rate. The medical fluid may be fed into the organ by gravity from an intermediary tank which has a low pressure head so over-pressurization of the organ is avoided. In either mode, preventing over-pressurization prevents and/or reduces damage to the vascular endothelial lining and to the organ tissue in general. Also, viability of the organ may be automatically monitored in either mode, preferably by monitoring fluid characteristics of the medical fluid that has been perfused through the organ, such fluid characteristics being indicative of organ viability. The perfusion process can be automatically controlled using a control program.					

L5 ANSWER 11 OF 197 WPIDS (C) 2003 THOMSON DERTWENT  
AN 2002-759308 [82] WPIDS  
CR 2002-394427 [42]; 2002-519114 [55]  
DNC C2002-214606  
TI **Perfusion solution for preserving organs and tissues**  
comprises a substance that stimulates cellular energy production under anaerobic conditions and an oxygen free radical scavenger.  
DC A96 B04 D16 D22  
IN ARRINGTON, B O; POLYAK, M  
PA (PIKE-N) PIKE LAB INC  
CYC 1  
PI US 2002115593 A1 20020822 (200282)\* 7p  
ADT US 2002115593 A1 Provisional US 2000-240024P 20001013, US 2001-976785  
20011012  
PRAI US 2000-240024P 20001013; US 2001-976785 20011012  
AB US2002115593 A UPAB: 20021220  
NOVELTY - Aqueous machine **perfusion** solution for preserving organs and tissues comprises a substance (a) that stimulates cellular energy production under anaerobic conditions, and an oxygen free radical scavenger (b).  
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:  
(1) an organ or tissue preserved in the above solution; and  
(2) a perfusion machine comprising a chamber through which the above solution circulates.  
USE - The solution is useful for preserving organs and tissues for transplantation by pouring the solution into a chamber maintained at low temperature (especially 2-10 deg. C) or physiological temperature (especially 37 deg. C), circulating the solution through the chamber, placing a cadaveric or living donor **organ** or tissue in the chamber and flushing the **organ** or tissue with the solution.  
ADVANTAGE - Compared with existing preserving media, the solution gives better preservation in terms of **organ** and tissue viability and function.  
Dwg. 0/0

L5 ANSWER 24 OF 197 WPIDS (C) 2003 THOMSON DERTWENT  
AN 2002-471677 [50] WPIDS  
DNC C2002-134176  
TI New flush solution, useful for preservation of cells, comprises water, saccharide, component with pH buffer properties and component with calcium transport blocking properties or anti-calcium action activity.  
DC B04 B05 D16 D22 E19  
IN LODGE, J P A; POTTS, D  
PA (UYLE-N) UNIV LEEDS  
CYC 99  
PI WO 2002041696 A1 20020530 (200250)\* EN 65p  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OR PT SD SE SL SZ TR TZ UG ZM ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT  
RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
AU 2002015131 A 20020603 (200263)  
AU 2002015131 A 20020603 (200263)  
ADT WO 2002041696 A1, WO 2001-GB5102 20011120, AU 2002015131 A AU 2002-15131  
20011120  
FDT AU 2002015131 A Based on WO 200241696  
PRAI GB 2000-28414 20001122  
AB WO 200241696 A UPAB: 20020807  
NOVELTY - A flush solution comprises (mmol/l):  
(a) water (a) for injection;  
(b) at least one saccharide (50 - 150);  
(c) at least one component with pH buffer properties (15 - 75);

(d) at least one component with calcium transport blocking properties or an anti-calcium action activity (0.0005 - 0.1); and

(e) and a thromboxane inhibitor (0.3 - 1).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) preparation of the flush preservation solution involving adding the components in sequence to water with the exception of at least one component with colloid osmotic properties and unstable components if any, dissolving, adding the component with colloid osmotic properties and unstable components and making the solution nearly up to volume and finally making up to volume to regulate pH, sterilizing and cooling;

(2) kit of parts comprising the flush preservation solution together with additional components; and

(3) method for flushing, preserving or flush preservation of cells in living cells tissues or organs involving contacting the cells, tissues or organs with the flush preservative solution for simple hypothermic storage by immersion or perfusion at a pressure of up to 200 (preferably up to 100) mmHg. The cells, tissues or organs are flushed with the solution, removed from the normal locus, cooled (preferably at 0 - 4 deg. C) and stored.

ACTIVITY - Vasotropic; Cardiotonic. No test data provided.

MECHANISM OF ACTION None given.

USE - As flush solution, preservation solution or flush preservation solution for the preservation of cells in the absence of a blood supply (e.g. intra abdominal organs such as kidney, liver, pancreas, intestine and bowel); for preserving muscular organs such as heart for preventing damage to organs, living tissues and cells; in transplantation including organs from heart beating or non-heart beating donors, in surgery including any situation of warm or cold ischemia, cardioplegia or open heart surgery, whole limb or whole body preservation, in experimentation on living tissues or in culturing and preserving engineered cells, tissues, organs, limbs or the whole body, for storage of flushed cells, tissues and organs (all claimed).

ADVANTAGE - The solution enables extended preservation of cells provides improved versatility effectiveness and reperfusion in transplantation and in surgery.

Dwg.0/10

LS ANSWER 26 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 2002-435153 [46] WPIDS  
DNC C2002-123540  
TI Apparatus for perfusing and holding organ, useful for avoiding damage during perfusion while monitoring, sustaining or restoring viability of organ, or for preserving organ during storage or transport, is new.  
DC A96 B04 D22  
IN BRASSIL, J; BROCKBANK, K G M; BURROUGHS, A; FRASER, R; HARRIS, S; ISAACS, D; KRAVITZ, D C; OWEN, D R; SCHEIN, D; STEIBEL, D J  
PA (ORGAN) ORGAN RECOVERY SYSTEMS INC  
CYC 94  
PI WO 2002026034 A2 20020404 (200246)\* EN *[Signature]* 12P  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD  
SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
AU 2001086777 A 20020408 (200252)  
ADT WO 2002026034 A2 WO 2001-US26591 20010827; AU 2001086777 A AU 2001-86777  
20010827  
FDT AU 2001086777 A Based on WO 200226034  
PRAI US 2000-645525 2000Q825  
AB WO 200226034 A UPAB: 20020722  
NOVELTY - An apparatus for perfusing at least one organ

, and for holding an organ for at least one of perfusion, storage, diagnosis and transport of the organ, is new.  
DETAILED DESCRIPTION - The apparatus for holding an organ comprises:

- (a) a portable housing; and
- (b) an organ supporting surface configured to support an organ within the housing, where the portable housing is configured to be received by at least one of an organ perfusion device, an organ transporter and an organ diagnostic device, and includes openings configured to allow tubing to pass through it, and be connected to the organ, and where a bottom portion of the housing is liquid-tight.

The apparatus for perfusing at least one organ

comprises:  
(i) at least one medical fluid reservoir;  
(ii) a fluid pathway connected to the reservoir and connectable to the organ;  
(iii) a first heat exchanger in heat exchange communication with the medical fluid reservoir; and  
(iv) a controller for controlling the first heat exchanger to allow perfusion of the organ with medical fluid at a first hypothermic temperature and a second hypothermic temperature lower than the first hypothermic temperature.

INDEPENDENT CLAIMS are also included for the following:

- (1) saleable kits comprising the apparatus above;
- (2) a method of controlling perfusion of at least one organ with medical fluid;
- (3) a recording medium that stores a control program for use by a perfusion system that perfuses at least one organ with a medical fluid, the control program including instructions for the method of (2);
- (4) a method of at least one of maintaining and restoring the viability of at least one organ subjected to period of ischemia or hypoxia;
- (5) methods of perfusing an organ;
- (6) a method of transporting and storing an organ;
- (7) a perfusion solution kit comprising a saleable package containing at least one first container holding a first perfusion solution for hypothermic perfusion at a first temperature and at least one second container for holding a second, different perfusion solution for hypothermic perfusion at a second temperature lower than the first temperature;
- (8) a control system for controlling perfusion to at least one organ with a medical fluid to maintain viability of the least one organ;
- (9) a portable transporter for holding a portable housing comprising: a base portion configured to facilitate an upright position of the transporter; a top portion; a pump; a power supply; and a compartment for holding a portable housing, where the portable housing is configured to contain at least one organ;
- (10) a method of controlling operation of a transporter;
- (11) an organ assessment system comprising: an organ support and at least one organ parameter sensor; an organ perfusing apparatus, where the system is adapted to assess the organ parameters while maintaining the status of the organ doing such assessment;
- (12) a method of assessing an organ;
- (13) a method of analyzing the viability of an organ;
- (14) a method of improving an organ of a tissue;
- (15) a method of determining viability of at least one organ;
- (16) a method of remotely monitoring an organ;
- (17) a kit comprising: a saleable package containing a set of tubes where the set of tubes are configured to connect an organ to an

organ perfusion apparatus; and

(18) a method of analyzing factors involved in organ transplantation or implantation by comparing outcomes of organs transplants in recipients, and comparing organ history during transport and/or storage.

USE - The apparatus is useful for preventing overpressurization, which prevents or reduces damages to vascular endothelia lining and to organ tissue in general. The apparatus is particularly useful for avoiding damage to an organ during perfusion while monitoring, sustaining and/or restoring the viability of the organ. It is also useful for preserving the organ during storage and/or transport.

DESCRIPTION OF DRAWING(S) - The figure shows the organ perfusion apparatus.

organ perfusion apparatus 1

housing 2

reservoir access door 3

front cover 4

control and display areas for monitoring and controlling perfusion 5a

control and display areas for monitoring and controlling perfusion 5b

control and display areas for monitoring and controlling perfusion 5c

control and display areas for monitoring and controlling perfusion 5d

organ chamber 40

tubing 50c

a pump for filtration 80

filter unit 82

pump 90

tubing 91

CO<sub>2</sub> scrubber/O<sub>2</sub> membrane 100

oxygenator 110

tubing 121

Dwg.1/31

L5 ANSWER 42 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 2001-355721 [37] WPIDS  
CR 1996-020279 [02]; 1996-020314 [02]; 1998-075906 [07]; 2000-204822 [18]

DNN N2001-258442 DNC C2001-110350

TI Functional potential determination method for organ to be transplanted, involves measuring parameter of fluid derived from explanted organs, such as organ product and/or perfusate and comparing with reference value.

DC B04 P31

IN BRASILE, L

PA (BREO-N) BREONICS INC

CYC 95

PI WO 2001037719 A2 20010531 (200137)\* EN 34P  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001043021 A 20010604 (200153)

US 6375613 B1 20020423 (200232)

EP 1233709 A2 20020828 (200264) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR

ADT WO 2001037719 A2 WO 2000-US41867 20001103; AU 2001043021 A AU 2001-43021  
20001103; US 6375613 B1 CIP of US 1994-246801 19940520, Div ex US  
1996-670569 19960626, CIP of US 1997-992284 19971217, US 1999-434952  
19991105; EP 1233709 A2 EP 2000-992312 20001103, WO 2000-US41867 20001103

FDT AU 2001043021 A Based on WO 200137719; US 6375613 B1 Div ex US 5699793,  
CIP of US 6024698; EP 1233709 A2 Based on WO 200137719

PRAI US 1999-434952 19991105; US 1994-246801 19940520; US 1996-670569

19960626; US 1997-992284 19971217

AB WO 200137719 A UPAB: 20021031  
NOVELTY - Determining the functional potential of an organ to be transplanted, comprising measuring a parameter of a fluid derived from an explanted organ e.g. from organ product and/or perfusate, to obtain a value, is new. The value is compared with reference values indicating normal organ function to determine if the obtained value is within the indicated reference values.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) severity determination method of ischemic damage to an organ intended for transplant;
- (2) severity determination method of acute tubular necrosis of kidney intended for transplant;
- (3) determination method of extent of damage to vascular endothelium of transplantable organ;
- (4) identifying method of primary non-function in an organ intended for transplant

USE - For determining functional potential of an organ to be transplanted, such as kidney, liver, pancreas, heart, lung, small bowel and eye. Also useful for determining extend of damage to vascular, endothelium of organs, level of oxidation capacity of organs, severity of ischemic damage to organs, severity of acute tubular necrosis of kidney, extent of damage to vascular endothelium of transplanted organ and identifying primary non-function of organ (claimed).

ADVANTAGE - The method effectively predicts transplant outcomes, using information regarding ongoing metabolism of organ during warm temperature perfusion.

Dwg.0/2

ANSWER 43 OF 197 WPIDS (C) 2003 THOMSON DERTWENT

L5 ANSWER 43 OF 197 WPIDS  
AN 2001-328870 [34] WPIDS  
DNC C2001-100936

TI Apparatus for mechanical organ perfusion during transport using pump with valve and membrane and compressed air cylinder.

DC D22 P34  
IN DOORSCHOT, B M; JASPER, J E N  
PA (UNAM) UNIV AMSTERDAM

CYC 92 PI WO 2001033959 A2 20010517 (200134)\* EN 17P  
RW: AT BE CH DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ

NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AL AM AT AU AZ BA BR BG BR BY CA CH CN CR CU CZ DE DK DM EE ES

FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS  
LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL

TJ TM TR TT TZ UG US UZ VN YU ZA ZW

NL 1013524 C2 20010509 (200147)

AU 2001017413 A 20010606 (200152)

EP 1229788 A2 20020814 (200261), EN

R: AL AT BE CH CY DE DK ES FI PR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR

ADT WO 2001033959 A2 WO 2000-NL814 20001108; NL 1013524 C2 NL 1999-1013524  
19991108; AU 2001017413 A AU 2001-17413 20001108; EP 1229788 A2 EP  
2000-980113 20001108, WO 2000-NL814 20001108

FDT AU 2001017413 A Based on WO 200133959; EP 1229788 A2 Based on WO 200133959

PRAI NL 1999-1013524 19991108

AB WO 200133959 A UPAB: 20010620  
NOVELTY - The apparatus (1) comprises an organ receptacle (2), propulsion means for moving the perfusate (7) from the liquid container (8) through the organ receptacle, and oxygenation means for organ receptacle aeration. The propulsion means can be a compressed air cylinder (3) and a pump with a valve (4) and a membrane (5) which can move in liquid container. The compressed air cylinder

additionally aerates the organ receptacle.

DETAILED DESCRIPTION - The apparatus (1) comprises an organ receptacle (2), propulsion means for moving the perfusate (7) from the liquid container (8) through the organ receptacle, and oxygenation means for organ receptacle aeration. The propulsion means can be a compressed air cylinder (3) and a pump with a valve (4) and a membrane (5) which can move in liquid container.

The compressed air cylinder additionally aerates the organ receptacle.

The valve (4) allows or blocks the flow of compressed air to the membrane. The membrane undergoes a reciprocating motion causing the perfusate to be pushed from the liquid container to the organ receptacle inlet pipe (18). When transporting livers two inlet conduits (18', 18'') are used to feed the liver artery and portal vein.

The valve is provided with a vent (11) which allows a reflux of the compressed air.

USE - For mechanical perfusion of a donor's organ during its transport.

ADVANTAGE - The apparatus is simple and inexpensive and achieves a higher success rate of transplantation and increases the number of usable donor organs.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic diagram of the apparatus.

Apparatus 1

Organ receptacle 2

Cylinder 3

Valve 4

Membrane 5

Perfusate 7

Liquid container 8

Vent 11

Inlet pipe 18

Inlet conduits 18', 18''

Dwg.1/3

L5 ANSWER 45 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 2001-102973 [11] WPIDS

DNC C2001-030207

TI Composition for donor organ preservation comprises a crystalloid based solution of polyethylene glycol-hemoglobin and at least one electrolyte, soluble protein, nutritional formulation and agent acting on the cardiovascular system.

DC A96 B05 D22

IN MILLIKEN, J C; PURDY, R E; SERNA DANNY, L  
PA (REGC) UNIV CALIFORNIA

CYC 92

PI WO 200101774 A1 20010111 (200111)\* EN 71p

    RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
    NL OA PT SD SE SL SZ TZ UG ZW

    W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES  
    FI GB GD GE GH GN HE HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS  
    LT LU LV MA MD MG MI MW MX NO NZ PL PT RO RU SD SE SG SI SK SL

    TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000057506 A 20010122 (200125)

EP 1207753 A1 20020529 (200243) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT

    RO SE SI

KR 2002059255 A 20020712 (200306)

ADT WO 2001001774 A1 WO 2000-US16895 20000619; AU 2000057506 A AU 2000-57506  
20000619; EP 1207753 A1 EP 2000-942962 20000619, WO 2000-US16895 20000619;

KR 2002059255 A KR 2001-716195 20011217

PDT AU 2000057506 A Based on WO 200101774, EP 1207753 A1 Based on WO 200101774  
PRAI US 1999-143709P, T9990714; US 1999-139819P 19990617

AB WO 200101774 A UPAB: 20010224

**NOVELTY** - Composition for donor organ preservation for transplantation comprises a crystalloid based solution of constituents including PEG-Hb, one or more physiologically essential electrolytes, at least one soluble protein, at least one nutritional formulation and at least one agent acting on the cardiovascular system.

**DETAILED DESCRIPTION - INDEPENDENT CLAIMS** are included for the following:

(1) composition for donor organ preservation for transplantation comprising a polyethylene glycol substituted bovine hemoglobin based solution for the purpose of ex vivo donor organ preservation, to preserve donor human and animal organs, ex vivo, prior to transplantation;

(2) composition for donor organ preservation for transplantation of a donor organ comprising an oxygen, nutritional and electrolyte environment for the tissue of the donor organ to provide ex vivo preservation such that the donor organ regains acceptable function post transplantation;

(3) a method for harvesting donor organs comprising excising an organ, perfusing the organ with a normokalemic hypocalcemic bovine PEG-Hb based solution and preserving the organ at a particular temperature for a predetermined time while continuing perfusion with the solution in an oxygenated environment.

**USE** - The crystalloid based solution is used for ex vivo preservation of donor organ allografts during transportation for the purpose of transplantation, for in vivo myocardial preservation during open-heart surgery or as a blood substitute or blood replacement (all claimed) e.g. in trauma induced blood loss. Composition comprising a polyethylene glycol substituted bovine hemoglobin based solution is useful for ex vivo human and animal donor organ preservation prior to transplantation. Composition comprising an oxygen, nutritional and electrolyte environment for tissue of donor organs provide ex vivo preservation so that the donor organ regains acceptable function post transplantation. Also for cardioplegia or hypothermic cardiac arrest.

**ADVANTAGE** - The compositions and method provide oxygen, a carbohydrate energy source, continuous metabolite wash out, and continuous perfusion with an isotonic, normokalemic, hypocalcemic solution that drastically improves myocardial preservation over current techniques.

Hypothermic perfusion preservation of rabbit heart using the invention for periods of 8 hours was shown to improve myocardial preservation and left ventricular function compared to 4 hours of hypothermic immersion storage in saline solution (considered to be the standard of care). In addition, hypothermic perfusion preservation of the rabbit heart using the invention for periods of 8 hours was also shown to produce left ventricular function that was superior over fresh control rabbit hearts immediately after removal from the chest.

Dwg.0/5

LS ANSWER 46 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 2001-081569 [10] WPIDS

DNC C2001-023716

TI Pressure-tight vessel for conservation of tissues and organs for re- or transplantation has cooler, unit for enriching perfusion solution with oxygen and perfusion pump connected to receptacle for tissue or organ.

DC D22  
IN BARTMANN, A; BERG, R  
PA (BART-I) BARTMANN A; (BERG-I) BERG R

CYC 1  
PI DE 19922310 A1 20001130 (200110)\* 3p  
ADT DE 19922310 A1 DE 1999119922310 19990514

PRAI DE 1999-19922310 19990514

NPA

AB DE 19922310 A UPAB: 20010220  
NOVELTY - Pressure-tight vessel for conservation of tissues and organs has a first inlet for a perfusion solution (I) and a second inlet for oxygen (O<sub>2</sub>); and contains a unit for enriching (I) with O<sub>2</sub>, a perfusion pump, a receptacle for the tissue or organ, a unit for discharging (I) that has flowed through the tissue or organ and a unit for cooling the inside of the vessel.

USE - The equipment is used for conservation of tissues and organs for re- or transplantation.

ADVANTAGE - Existing equipment is used for cooling the tissue or organ and subjecting it to an O<sub>2</sub> atmosphere under pressure. However, perfusion with a suitable solution is also necessary. The present equipment allows tissues or organs to be kept for longer periods.

DESCRIPTION OF DRAWING(S) - The drawing shows a sketch of the equipment.

Vessel 10

First inlet for perfusion solution 12

Second inlet for O<sub>2</sub> 14

Enrichment unit 16

Perfusion pump 18

Receptacle for tissue or organ 20

Unit for discharging solution that has flowed through the tissue or

organ 22

Cooler 24

Compressed air inlet 26

Outlet for chamber gas 28

Outlet for excess oxygen from enrichment unit 30

Outlet for used perfusion solution 32

Dwg.1/1

L5 ANSWER 52 OF 197 WPIDS (C) 2003 THOMSON DERWENT

AN 2000-665054 [64] WPIDS

CR 2003-129153 [12]

DNC C2000-201490

TI Exsanguinous metabolic support system, useful e.g. for preserving organs intended for transplantation, includes perfusion with warm nutrient solution.

DC B04 D16

IN BRASILE, L

PA (BREO-N) BREONICS INC

CYC 92

PI WO 2000061166 A1 20000419 (200064)\* EN 62p RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW NO NZ PL PT RO RU SD SE SG SI SK SL TU TM TR TT TZ UA UG UZ VN YU ZA ZW

AU 2000043454 A 20001114 (200108)

EP 1181032 A1 20020227 (20022) EN

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

ADT WO 2000061166 A1 WO 2000-US9894 20000413; AU 2000043454 A AU 2000-43454 20000413; EP 1181032 A1 EP 2000-923303 20000413, WO 2000-US9894 20000413

FDT AU 2000043454 A Based on WO 2000061166; EP 1181032 A1 Based on WO 2000061166

PRAI US 1999-129257P 19990414

AB WO 2000061166 A UPAB: 20030218  
NOVELTY - An exsanguinous metabolic support system (A) for maintaining an isolated organ, tissue or section (B) in a nearly normal metabolic state, is new.

DETAILED DESCRIPTION - (A) comprises:  
(i) a perfusion subsystem comprising paths for circulating warm perfusion solution able to support (B);

(ii) an organ chamber for (B), mounted in the perfusion path;  
(iii) a controlled gassing system for regulating respiratory gases and the pH of the perfusion solution; and  
(iv) a controller for maintaining temperature of the solution at 25-37 deg. C.

INDEPENDENT CLAIMS are also included for the following:  
(a) a method for maintaining (B) for transplantation by flushing with a non-physiological buffer at 18-37 deg. C to remove blood products, perfusing in a warm preservation system that maintains a nearly normal rate of metabolism, and monitoring functional integrity of (B);  
(b) a method for delivering a therapeutic agent (I) to an isolated (B) by flushing as in (a) and maintaining (B) at 25-37 deg. C in a recirculating perfusion solution to which (I) has been added, at a nearly normal metabolic state, then returning (B) to the body;  
(c) a solution (S) for use in (A);  
(d) a method for warm preservation of (B) for transplantation by flushing at 18-37 deg. C, with (S); and  
(e) a method for storing (B) intended for transplant, by flushing and perfusing as in (a), then storing at 4-8 deg. C.  
USE - (A) is used for:  
(i) long-term maintenance of (A) intended for transplantation;  
;  
(ii) resuscitation and repair of organs that have suffered warm ischemic damage (e.g. organs taken from cadavers in which the heart has stopped beating);  
(iii) for delivering pharmaceuticals (genes, immunomodulators or chemotherapeutic agents) to isolated organs; and  
(iv) for predicting post-transplant organ function.

ADVANTAGE - The system maintains (A) at nearly physiological conditions for a long time and so ensures retention of functional integrity (which can be assessed during storage). Organs treated with a warm perfusion solution will survive longer during subsequent cold storage compared with those put into cold storage immediately after isolation.

Dwg.0/2

L5 ANSWER 82 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1998-075906 [07] WPIDS  
CR 1996-020279 [02]; 1996-020314 [02]; 2000-204822 [18]; 2001-355721 [37]  
DNN N1998-060674 DNC C1998-025321  
TI Monitoring functional characteristics of organs prior to transplantation - by warm preservation system in which parameters of circulated perfusate and organ product may be measured and compared to reference values.  
DC B04 D16 D22 P31  
IN BRASILE, L  
PA (BREO-N) BREONICS INC  
CYC 1  
PI US 569979 A 19971223 (199807)\* 14p  
ADT US 5699793 A CIP of US 1994-246801 19940520, US 1996-670569 19960626  
PRAI US 1996-670569 19960626; US 1994-246801 19940520  
AB US 5699793 A UPAB: 20020521  
The following are claimed: (1) prospectively determining the potential function of an organ post-transplantation, by measuring functional characteristics related to organ metabolism while the organ is being perfused in an ex vivo warm preservation process/system at or near normal rate of metabolism, comprising: (a) measuring parameters of a fluid (selected from organ product and/or circulated perfusate) during ex vivo warm preservation, and (b) relating the measured parameters to reference interval values, where the values of measured parameters outside the

reference intervals may be indicia of organ damage or injury which may affect the function of the organ post-transplantation; (2) monitoring functional characteristics of an organ which is being preserved in an ex vivo warm preservation process/system at near normal rate of metabolism, comprising (1a), during ex vivo warm preservation.

USE - The method allows monitoring of the functional characteristics of organs prior to transplantation, and thus prospective determination of the potential function of the transplanted organ. Until now, the only way to evaluate the functional capabilities of these organs was to transplant them.

ADVANTAGE - The method/system supports a level of metabolism ex vivo within or near the respective normal range in vivo and provides enough oxidative metabolism to result in the normal functional product of the organ.

Dwg.0/4

LS ANSWER 84 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1998-032638 [03] WPIDS  
DNC C1998-011124  
TI Apparatus for administering chilled oxygenated nutrient - for in vitro conservation of viable transplantable organs has pressurised oxygen supply for pumping and oxygenating perfusate liquid supplied to organ in sealed chamber.  
DC D22  
IN GARDETTO, W W; HEACOX, J K; MATTHEWS, J L  
PA (TRAN-N) TRANSCEND DATA SERVICE INC  
CYC 44  
PI WO 9745527 A1 19971204 (199803)\* EN 22p  
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
W: AU BG BR BY CA CN CZ DE FI GE HU IS JP KR LT LV MD MX NO NZ PL RO  
RU SG SI SK UA US VN  
AU 9730787 A 19980105 (199821)  
EP 842261 A1 19980520 (199824) EN  
R: DE ES FR GB  
US 5965433 A 19991012 (199949)  
MX 9801137 A1 19981101 (200022)  
ADT WO 9745527 A1 WO 1997-US9000 19970528; AU 9730787 A AU 1997-30787  
19970528; EP 842261 A1 EP 1997-925738 19970528, WO 1997-US9000 19970528;  
US 5965433 A US 1996-652696 19960529; MX 9801137 A1 MX 1998-1137 19980210  
FDT AU 9730787 A Based on WO 9745527; EP 842261 A1 Based on WO 9745527  
PRAI US 1996-652696 19960529  
AB WO 9745527 A UPAB: 19980119

Perfusion apparatus has a sealed chamber (18) for receiving an organ (12) and an oxygenator (16) that is supplied separately with a liquid perfusate and pressurised oxygen.

A control valve alternately supplies compressed oxygen to a pneumatic actuator and one side of the piston of a positive displacement perfusate pump (24) operated by the actuator (22). Perfusate on the other side of the piston is connected by a conduit to the oxygenator. Separate return conduits (84, 86) connect the sealed chamber to the perfusate in the oxygenator and the pump.

The oxygenator has two compartments each divided by an oxygen permeable membrane into chambers for perfusate and oxygen. The two perfusate chambers are in flow communication. One is connected to the perfusate supply and the other to sealed chamber. The two oxygen chambers communicate with the oxygen supply.

USE - The apparatus is used for administering chilled oxygenated nutrient for in vitro conservation of viable transplantable organs.

ADVANTAGE - The apparatus can sustain pumping for 24 hours without changing the oxygen supply. No membranes, diaphragms or electrical power are required to deliver the perfusate.

L5 ANSWER 92 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1996-455054 [45] WPIDS  
 DNN N1996-383525 DNC C1996-142645  
 TI Organ storage and transport has contoured pads for organ  
 - in container within temp. controlled portable module, with connection to  
 perfusion appts..  
 DC D22 Q74 Q75  
 IN FAHY, G M  
 PA (LIFE-N) LIFE RESUSCITATION TECHNOLOGIES INC; (ORGAN-N) ORGAN INC; (LRTL-N)  
 LRT INC  
 CYC 25  
 PI WO 9630111 A1 19961003 (199645)\* EN 47p  
 RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
 W: AU CA CN JP KR SG  
 AU 9653764 A 19961016 (199706)  
 US 5586438 A 19961224 (199706) 17p  
 EP 817670 A1 19980114 (199807) EN  
 R: BE CH DE ES FR GB IE IT LU NL SE  
 ADT WO 9630111 A1 WO 1996-US4235 19960327; AU 9653764 A AU 1996-53764  
 19960327; US 5586438 A US 1995-411274 19950327; EP 817670 A1 EP  
 1996-910614 19960327, WO 1996-US4235 19960327  
 FDT AU 9653764 A Based on WO 9630111; EP 817670 A1 Based on WO 9630111  
 PRAI US 1995-411274 19950327  
 AB WO 9630111 A UPAB: 19961111  
 Device for transporting or storing an organ comprises an  
 organ container (11) with cover (12) and at least one recessed and  
 contoured portion (13) for the organ (223); and a temp.  
 controlled portable storage module (200) for receiving the organ  
 container (11). A further device for static storage and perfusion  
 storage comprises organ container with assembly (122) for  
 connecting organ to perfusion appts.; and temp.  
 controlled storage module with cooling material in cavity, organ  
 container cavity and passageway through outer wall for connection to  
 perfusion appts.  
 USE - The device can be used for the storage and transportation of  
 organs for transplant, with temp. control and  
 perfusion capability.  
 ADVANTAGE - Padding of organs is less harmful to the  
 organs than known methods such as towels or gauze. Organ  
 movement is restrained. Storage temp. can be varied dependent on coolant  
 chosen, giving superior storage conditions above 0deg.C, compared with  
 storage in melting ice. The appts. perfuses organs at  
 lower cost and lower risk. Rapid temp. rise does not occur when  
 perfusion is terminated.  
 Dwg.3/12

L5 ANSWER 94 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1996-454883 [45] WPIDS  
 DNN N1996-383426 DNC C1996-142544  
 TI Organ perfusion and evaluation apparatus -  
 perfuses, resuscitates and monitors organ performance  
 and adjusts perfusion rate accordingly.  
 DC D22 S05  
 IN ARNAUD, F; FAHY, G M  
 PA (AMNNA-N) AMERICAN NAT RED CROSS; (LIFE-N) LIFE RESUSCITATION TECHNOLOGIES  
 INC; (ORGAN-N) ORGAN INC  
 CYC 23  
 PI WO 9629865 A1 19961003 (199645)\* EN 60p  
 RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
 W: AU CA CN JP KR SG  
 AU 9653754 A 19961016 (199706)  
 ADT WO 9629865 A1 WO 1996-US4205 19960327; AU 9653754 A AU 1996-53754 19960327

FDT AU 9653754 A Based on WO 9629865  
PRAI US 1995-411227 19950327  
AB WO 9629865 A UPAB: 19961111  
Method for perfusing an organ with blood or other oxygen carrying substance, comprising connecting the organ to a fluid system with a controller and monitor; flowing fluid into the organ and perfusing fluid through it; monitoring physiological performance (gas tension, pH, temp., volume); communicating above characteristics to computer to control the response as a function of monitored data. Two appts. for perfusing an organ are also claimed.  
USE - Perfusing an organ to maintain the viability of the organ and allow its evaluation. It can also resuscitate organs.  
ADVANTAGE - Organs that would have been useless for transplant can be resuscitated if they are found to be viable. Low perfusate volume is required. Lost fluid volume can be replenished. Different organs can be perfused, such as kidney, liver, pancreas. Compounds other than blood compounds can be used. The organ is not floating. Environmental conditions are taken into consideration by the device. The performance of the organ is monitored.  
Dwg.1/17

LS ANSWER 96 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1996-371149 [37] WPIDS  
CR 1992-166859 [20]; 1995-036133 [05]; 1996-455027 [45]  
DNN N1996-312267 DNC C1996-117723  
TI Preserving organs and prolonging their viability in live patients or cadaver(s) - by lowering temp. of organs by introducing cooled fluid through cannula and inhibiting free radical damage by introducing free radical scavengers.  
DC B05 D22 P34  
IN GOLDMAN, R M; KLATZ, R M  
PA (LIFE-N) LIFE RESUSCITATION TECHNOLOGIES INC  
CYC 23  
PI WO 9623544 A1 19960808 (199637)\* EN 41p  
RN: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE  
W: AU CA CN JP KR SG  
AU 9650207 A 19960821 (199648)  
US 5584804 A 19961217 (199705) 14p  
US 5709654 A 19980120 (199810) 13p  
US 5752929 A 19980519 (199827)  
US 5827222 A 19981027 (199850)  
KR 98047626 A 19980915 (199940) #  
CN 1185278 A 19980624 (200256) #  
ADT WO 9623544 A1 WO 1996-US1280 19960202; AU 9650207 A AU 1996-50207 19960202; US 5584804 A Div ex US 1990-595387 19901010, CIP of US 1992-886041 19920519, CIP of US 1993-69916 19930601, US 1995-383240 19950203; US 5709654 A Div ex US 1990-595387 19901010, CIP of US 1992-886041 19920519, CIP of US 1993-69916 19930601, Cont of US 1995-383240 19950203, US 1995-480256 19950607; US 5752929 A Div ex US 1990-595387 19901010, CIP of US 1992-886041 19920519, CIP of US 1993-69916 19930601, Cont of US 1995-383240 19950203, US 1995-476719 19950607; US 5827222 A Div ex US 1990-595387 19901010, CIP of US 1992-886041 19920519, CIP of US 1993-69916 19930601, CIP of US 1995-383240 19950203, US 1995-484601 19950607; KR 98047626 A KR 1996-66135 19961216; CN 1185278 A CN 1996-123910 19961216  
FDT AU 9650207 A Based on WO 9623544; US 5584804 A Div ex US 5149321, CIP of US 5234405, CIP of US 5395314; US 5709654 A Div ex US 5149321, CIP of US 5234405, CIP of US 5395314, Cont of US 5584804; US 5752929 A Div ex US 5149321, CIP of US 5395314, Cont of US 5584804; US 5827222 A Div ex US 5149321, CIP of US 5234405, CIP of US 5395314, CIP of US 5584804; US 5584804

PRAI US 1995-484601 19950607; US 1995-383240 19950203; US 1990-595387  
19901010; US 1992-886041 19920519; US 1993-69916 19930601; US  
1995-480256 19950607; US 1995-476719 19950607; KR 1996-66135  
19961216; CN 1996-123910 19961216

AB WO 9623544 A UPAB: 20020903

A method of treating organs to preserve them and prolong their viability in live patients and cadavers comprises: (a) cannulating a body cavity of the patient or cadaver; and (b) perfusing the body cavity by: (1) lowering the temp. of the organs in the cavity below body temp. by introducing cooled fluid through the cannula; and (2) inhibiting free radical damage in the organs by introducing free radical scavengers through the cannula; so the metabolic rates of the organs are slowed and the organs remain viable.

Also claimed are: (1) a method of treating organs as above but using an instrument in place of a cannula to introduce the fluid and scavengers; and (2) a method of treating brain and/or associated nervous tissue injury comprises: (a) establishing an artificial circulation in the circulatory system of a patient; (b) lowering the metabolism of the brain by introducing cooled fluid below body temp. to the brain and/or associated tissue; and (c) oxygenating the brain by introducing oxygen carrying agents into the artificial circulation; so the patient remains substantially neurologically intact.

USE - The method is esp. suitable for treating brain and associated nervous tissue injuries and preserving organs in brain dead humans or cadavers to keep them viable and suitable for harvesting for subsequent transplantation. The method can also be used for treating injuries suffered as a result of ischaemic injury due to cardiac arrest, major trauma, suffocation, drowning, electrocution, blood loss and toxic poisoning, e.g. by cyanide or carbon monoxide..

ADVANTAGE - The method enables non-invasive treatment of ischaemic and anoxic brain injuries immediately upon cardiac arrest to keep patient neurologically intact. Permanent irreversible damage to brain is avoided by limiting free radical damage. The brains critical 4 min. viability window is extended.

Dwg.0/5

L5 ANSWER 106 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1996-020279 [02] WPIDS  
CR 1996-020314 [02]; 1998-075906 [07]; 2000-204822 [18]; 2001-355721 [37]

DNC C1996-006941

TI Determn. of potential function, after transplantation, of organs - preserved in a warm perfusion system at nearby normal metabolic rate by measuring parameters of organ products or perfused soln..

DC B04 D22 P32

IN BRASILE, L; CLARKE, J  
PA (VECT-N) VEC TEC INC

CYC 27

PI WO 9531897 A1 19951130 (199602)\* EN 40P

RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

W: AU BR CA CN FI JP MX NO PL RU

AU 9525173 A 19951218 (199611)

AU 9525951 A 19951218 (199611)

EP 759692 A1 19970305 (199714) EN

R: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

ADT WO 9531897 A1 WO 1995-US6290 19950518; AU 9525173 A AU 1995-25173  
19950518; AU 9525951 A AU 1995-25951 19950518; EP 759692 A1 EP 1995-920526  
19950518; WO 1995-US6290 19950518

FDT AU 9525173 A Based on WO 9531944; AU 9525951 A Based on WO 9531897; EP  
759692 A1 Based on WO 9531897

PRAI US 1994-246801 19940520; US 1995-437155 19950517

AB WO 9531897 A UPAB: 20020521

The potential function of an organ after transplantation is determined by measuring functional characteristics related to

metabolism while the organ is being perfused in an ex vivo, warm preservation process/system at a nearby normal rate of metabolism. Parameters of organ products or circulating perfusate are compared with reference interval values (RIV) so that any measured value outside RIV may indicate organ damage or injury likely to affect function after transplanting. The same method can be used to monitor the function of stored organs. Also new is pump device connected to a warm preservation process/system that allows removal and collection (for analysis) of perfusate or organ product samples without affecting the integrity of the system.

USE - The method is applied to kidney heart, liver, small bowel, pancreas, lung and eyes, e.g. to evaluate functional status of organs after ischaemia, in a borderline donor or in any situation where the organ has been compromised.

ADVANTAGE - The warm preservation system maintains organs at 70-90% of the normal rate, allowing, for the first time, evaluation of their function (which is impossible in cold preservation systems because of inevitably low metabolic activity).

Dwg.0/4

L5 ANSWER 112 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1995-256075 [34] WPIDS  
DNC C1995-116976  
TI Preservation of living tissues e.g. livers or kidneys - by perfusing with two new perfusate solns. and cooling organ to liquid nitrogen temp...  
DC B04 B05 D22  
IN KABURAGI, T; SHIGEMATSU, A; SUEYOSHI, T; SUZUKI, S  
PA (SHIG-I) SHIGEMATSU A; (SEIT-N) SEITAI KAGAKU KENKYUSHO KK  
CYC 5  
PI EP 664080 A1 19950726 (199534)\* EN 22p  
R: DE FR GB  
CA 2141012 A 19950726 (199542)  
JP 08034701 A 19950206 (199615) 9p  
JP 08217601 A 19960827 (199644) 9p  
ADT EP 664080 A1 EP 1995-100897 19950124; CA 2141012 A CA 1995-2141012 19950124; JP 08034701 A JP 1994-323651 19941201; JP 08217601 A JP 1995-137316 19950510  
PRAI JP 1994-334222 19941215; JP 1994-23296 19940125; JP 1994-125741 19940516; JP 1994-323651 19941201  
AB EP 664080 A UPAB: 19950904  
Living tissue preservation comprising: (a) injecting a perfusate into a blood vessel leading to an organ of an animal to substitute the perfusate for blood in the organ; (b) cooling at least a part of the organ, resected as a tissue sample from the animal, to lower the temp. to liquid nitrogen temp.; and (c) keeping the tissue sample at this temp. for preservation.

A first saccharide soln. (51), which causes no haemolysis in blood, is injected as a first perfusate, into one or more blood vessels leading to the organ. A second saccharide soln. (52), contg. a saccharide (an aq. soln. of which is free from phase sepn. and does not produce crystals at liquid nitrogen temp.) and an organic solvent (a mixt. of which with water is free from phase sepn. and does not produce crystals at liquid nitrogen temp.), is then injected into one or more blood vessels leading to the organ, as a second perfusate to be substd. for the first perfusate in the organ.

USE -The perfusates are useful for preservation, and treatment after preservation, of organs, esp. liver and kidney, for organ transplantation and clinical and non-clinical studies of living tissues.

ADVANTAGE - The processes allow maintenance of characteristics and function of cells constituting the tissue. They improve the chances of organ transplantations being successful, and improve the accuracy of studies of biological activity in the tissues.

Dwg. 0/0

L5 ANSWER 117 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1995-019136 [03] WPIDS  
DNC C1995-008641  
TI Perfusate for storing under room temp. - consists of per fluoro-carbon  
cpd., glucose, insulin, allopurinol, superoxide dismutase reacted with  
polyethylene glycol, etc., used to reserve transplantation  
organs.  
DC A96 D22  
PA (KAWA-I) KAWAMURA A  
CYC 1  
PI JP 06305901 A 19941101 (199503)\* 9p  
ADT JP 06305901 A JP 1993-99775 19930426  
PRAI JP 1993-99775 19930426  
AB JP 06305901 A UPAB: 19950126  
A perfusate consists of 0.1-10 (W/V)% of perfluorocarbon cpd., 1-20 mmol/L  
of glucose, 10-200 U/L of insulin, 0.1-5 mmol/L of allopurinol, 1-10 mg/L  
of SOD (superoxide dismutase) reacted with PED (polyethylene glycol), 1-10  
mmol/L of adenosine, 1-20 mg/L of dexamethasone, 1-5 (W/V)% of  
hydroxyethyl starch, 140-145 mEq/L of sodium ions, 2-6 mEq/L of potassium  
ions, and 90-95 mEq/L of salt ions; and its pH is 7-8, and the osmotic  
pressure is 300 to 340 mOsm/L.  
USE/ADVANTAGE - The perfusate is used to reserve  
transplantation organs under room temp. In storing the  
transplantation organs under room temperature, pref.,  
the perfusate is subjected to oxygenation, and is supplied to the  
organs at a perfusion pressure of 60-100 mm Hg. Stable  
perfusion pressure can be maintained and sufficient oxygen can be  
supplied. Thus, transplantation organs can be stored  
at room temperature (10-30 deg.C) for a long period of time (1-20 hours).  
Dwg. 0/1

L5 ANSWER 119 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1994-260367 [32] WPIDS  
DNC C1994-118985  
TI Initial perfusion soln. for organ  
transplantation - contains potassium- and sodium- chloride-,  
phosphate- and hydrogen carbonate-ions, mannitol and hydroxyethyl starch.  
DC A96 B05 D22 E19  
PA (MORP) MORISHITA ROUSSEL KK  
CYC 1  
PI JP 06192001 A 19940712 (199432)\* 6p  
ADT JP 06192001 A JP 1992-350907 19921204  
PRAI JP 1992-350907 19921204  
AB JP 06192001 A UPAB: 19940928  
Initial perfusion solns. for organ  
transplantation having 340-450 mOsm/L, pH 7.0-7.6 and contg.  
39-139 mEq of K+, 0-17 mEq of Na+, 4-34 mEq of Cl-, 20-60 mM of phosphate,  
0-14 mEq of HCO3-, 110-329 mM of mannitol and 30.0-80.0 g of hydroxyethyl  
starch, partic. average mol. wt. of 200,000-900,000 dalton with  
substitution rate of 0.4-0.8.  
Solns. contg. 2-6C carbonic acids (e.g. lactic, acetic, propionic and  
beta-hydroxybutyric, citric and gluconic acids) and short chain fatty  
acids up to 8C and their salts (e.g. Na and K), and hydroxyethyl starch  
with average molecular wt. of 200,000-900,000, pref. approx.  
350,000-800,000 dalton are used to prepare the compns.  
USE/ADVANTAGE - Stable, low cost maintenance of functions of  
organs for transplantation in the initial stage of  
perfusion.  
Dwg. 0/5

L5 ANSWER 124 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1993-365085 [46] WPIDS

DNC C1993-161777  
 TI Initial perfusate with specified osmotic pressure for organ transplantation - comprises sodium and potassium cations chloride, phosphate and bi carbonate anions, mannitol and hydroxyethyl starch.  
 DC A96 B06 D22 E17 E37  
 PA (MORP) MORISHITA ROUSSEL KK  
 CYC 1  
 PI JP 05271001 A 19931019 (199346)\* 5p  
 ADT JP 05271001 A JP 1992-86365 19920309  
 PRAI JP 1991-349172 19911205  
 AB JP 05271001 A UPAB: 19940103  
 Perfusate having osmotic pressure of 340-450 mOsm/L, pH 7.0-7.6 and composed of 39-139 mEq of Na+, 0-14 mEq of K+, 4-34 mEq of Cl-, 20-60 mM of phosphate, 0-14 mEq of HCO3-, 110-329 mM of mannitol and 30.0-80.0g of hydroxyethyl starch, partic. having average mol. wt. of 200,000-900,000 dalton with substn. rate of 0.4-0.8 in one L.  
 Components of claimed compsn. are dissolved in distilled water to give average mol. wt. of 200,000-900,000 pref. 350-000-800,000. Their participating salts include phosphate, carbonate, lactate, acetate, citrate, and fatty acid up to 8C.  
 USE/ADVANTAGE - A stable and low cost initial perfusate with satisfactory maintenance of functions.  
 In an example, in 800ml of distilled water at about 50 deg.C 60g of hydroxyethyl starch having average mol. wt. of 429,000 with substitution rate of 0.55, 1.42g of KCl, 5.18g of KH<sub>2</sub>PO<sub>4</sub>, 1.43g of KH<sub>2</sub>PO<sub>4</sub>, 42.5 g of mannitol and 0.76g of NaHCO<sub>3</sub> were dissolved and made 1,000 ml. The soln. was filtered and filled in a bottle and pasteurised with high pressure steam to give the perfusate.  
 Dwg.0/0

L5 ANSWER 129 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1993-045147 [05] WPIDS  
 CR 1996-151051 [15]; 1997-065217 [06]  
 DNN N1993-034643 DNC C1993-20354  
 TI Composite controlled cyto-protectant perfusion appts. for organs - comprises fluid reservoirs, organ container, fluid paths, fluid pumps, measuring means for temp., pH etc. and computer coupled via sensors.  
 DC D22 E16 E17 S05 T01 X25  
 IN FAHY, G M; KHIRABADI, B S; FAY, G M  
 PA (AMNA-N) AMERICAN NAT RED CROSS  
 CYC 18  
 PI WO 9300808 A1 19930121 (199305)\* EN 84p  
 RW: AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
 W-CA-JP  
 US 5217860 A 19930608 (199324) 34p  
 EP-594733 A1 19940504 (199418) EN  
 R: AT BE CH DE DK ES FR GB IT LI LU MC NL SE  
 JP 07500815 W 19950126 (199513) 20p  
 EP 594733 A4 19941130 (199541)  
 US 5472876 A 19951205 (199603) 34p  
 EP 800765 A2 19971015 (199746) EN 37p  
 R: AT BE CH DE DK ES FR GB IT LI LU MC NL SE  
 EP 800765 B1 20000524 (200030) EN  
 R: AT BE CH DE DK ES FR GB IT LI LU MC NL SE  
 DE 69231106 E 20000629 (200038)  
 ADT WO 9300808 A1 WO 1992-US5711 19920707; US 5217860 A US 1991-725054 19910708; EP 594733 A1 EP 1992-915604 19920707, WO 1992-US5711 19920707; JP 07500815 W WO 1992-US5711 19920707, JP 1993-502398 19920707; EP 594733 A4 EP 1992-915604 ; US 5472876 A Div ex US 1991-725054 19910708, Cont of US 1993-29432 19930310, US 1995-375469 19950119; EP 800765 A2 Div ex EP 1992-915604 19920707, EP 1997-107891 19920707; EP 800765 B1 Div ex EP 1992-915604 19920707, EP 1997-107891 19920707; DE 69231106 E DE 1992-631106 19920707, EP 1997-107891 19920707

FDT EP 594733 A1 Based on WO 9300808; JP 07500815 W Based on WO 9300808; US 5472876 A Div ex US 5217860; EP 800765 A2 Div ex EP 594733; EP 800765 B1 Div ex EP 594733; DE 69231106 E Based on EP 800765  
PRAI US 1991-725054 19910708; US 1993-29432 19930310; US 1995-375469  
19950119

AB WO 9300808 A UPAB: 20000811  
Appts. comprises: a number of fluid reservoirs; an organ container for holding the biological organ; means defining a first fluid flow path between the reservoirs and the organ container; selection means interposed in the first fluid path for selectively connecting the reservoirs to the organ container; pump means interposed in the first fluid flow path for pumping fluid from one or more of the reservoirs to the organ container and for pumping fluid from the organ container to one or more of the reservoirs; means defining a second fluid flow path between the output side of the pump means and the reservoirs and bypassing the organ container; sensor means interposed in the fluid flow paths for sensing at least one of the concn., temp., pH, and pressure of the fluid flowing in the first and second fluid flow paths; a programmable computer; means coupling the sensor means to the computer for providing a continuous information stream from the sensor to the computer; and means coupling the computer to the selection means and the pump means to continuously selectively control (a) the flow of fluid from each of the reservoirs individually to the first fluid flow path, and (b) at least one of the pressure and pH of the fluid flowing in the first fluid path, in accordance with a predetermined computer program without operator intervention.

USE/ADVANTAGE - For computer-controlled perfusion of biological organ, e.g. heart, kidney, liver etc. The apparatus is esp. useful for introducing and removing vitrifiable concns. of cryoprotective agents into and from isolated organs or tissues for preservation and subsequent use. The apparatus permits control of the concn. of cryoprotectant or any other fluid or drug in the perfusate according to a wide variety of predetermined concn.-time histories independently of the flow rate of the perfusate. The appts. provides for in-line sensing of concn., pH, perforate temp. and other parameters and avoids the need for perforate in reservoirs or for manual measurements. It minimises the differences between concn. of cryoprotectant monitored and in the perfusate reservoirs. A perfused into the organ. Arterio-venors difference in cryoprotectant concn. can be monitored across the organ. Varying sizes of organs can be perfused or cryoprotected.

mp

Dwg.1/8

L5 ANSWER 139 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1992-118311 [15] WPIDS

DNC C1992-054897

TI Appts. to preserve internal organ of animal or human for transplanting - comprising an organ carrying unit with an observation face which connects with a perfusate pump.

DC D22

PA (OLYU) OLYMPUS OPTICAL CO LTD

CYC 1

PI JP 04059701 A 19920226 (199215)\* 5p

ADT JP 04059701 A JP 1990-166867 19900627

PRAI JP 1990-166867 19900627

AB JP 04059701 A UPAB: 19931006

Appts. comprises an organ carrying unit connectable with an in-hospital unit and a perfusate pump with a head attached to the observation face of the carrying unit when both units are connected.

USE - Used for transplanting internal organs.

LS ANSWER 143 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1991-303029 [41] WPIDS  
DNC C1991-131274  
TI Maintaining viability of organs for transplant -  
immersed in perfusate with constant monitoring and automatic adjustment of  
physical and chemical parameters.

DC D22  
IN MARTINDALE, J G; PURDY, R E; STUPECKY, G L; TIDWELL, R G  
PA (REGC) UNIV CALIFORNIA

CYC 1  
PI (US-5051352 A 19910924 (199141)\*  
ADT US-5051352 A US 1987-106074 19871007  
PRAI US 1987-106074 19871007  
AB US 5051352 A UPAB: 19930928

The viability of an animal organ for transplantation  
is maintained. The organ is held in a chamber through which a  
perfusate is circulated. The temp. of the perfusate is regulated to  
maintain both perfusate and organ in a desired temp. range. The  
perfusate is oxygenated prior to circulation. The electrochemical  
characteristics of the organ and perfusate are monitored and  
maintained in predetermined ranges. These include the ratio of intra- or  
extra-cellular concn. of potassium ions, the extra-cellular concn. of  
sodium ions, and the pH of the perfusate.

The electrophysical characteristics of the organ and  
perfusate are also monitored. These include any difference in charge  
distribution between various portions of the organ, extraneous  
electromagnetic stimuli, and electrical properties, e.g. voltage,  
conductance, impedance and resistance, of the perfusate. Electrical  
stimulation is generated and delivered to the organ or perfusate  
when the measured values fall outside predetermined limits.

USE - The appts. and method preserve animal organs, esp.  
human, in a viable state for transplantation or medical  
research. These include heart, liver, kidneys, brain, limbs and tissue.  
1/7

LS ANSWER 144 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1991-233791 [32] WPIDS  
DNC C1991-101668  
TI Appts. to preserve internal organ - comprising suction tube to  
draw off perfusate from internal organ in holder in storage  
chamber.

DC D22  
PA (OLYLU) OLYMPUS OPTICAL CO LTD  
CYC 1  
PI JP 03151303 A 19910627 (199132)\*  
ADT JP 03151303 A JP 1989-287385 19891106  
PRAI JP 1989-287385 19891106  
AB JP 03151303 A UPAB: 19930928  
Appts. comprises a hydrophobic holder for holding an internal  
organ in an internal organ storing chamber, and suction  
tube to suck a perfusate from the holder to outside of the appts. and  
valve set at a drain side of the suction tube.  
USE - For transplanting internal organs.

0/4

LS ANSWER 146 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1991-222577 [30] WPIDS  
DNC C1991-096622  
TI Preservation solns. for organs for transplantation -  
comprise pyruvate, inorganic salts providing ions to retain cell action  
potential across membrane, protein and opt. ethanol.  
DC D22 E12 E37  
IN WIKMANCOFF, J  
PA (REGC) UNIV CALIFORNIA

- CYC 33  
 PI WO 9109520 A 19910711 (199130)\*  
 RW: AT BE CH DE DK ES FR GB GR IT LU NL OA SE  
 W: AT AU BB BG BR CA CH DE DK ES FI GB HU JP KP KR LK LU MC MG MW NL  
 NO RO SD SE SU  
 AU 9171755 A 19910724 (199143)  
 US 5066578 A 19911119 (199149)  
 US 5075210 A 19911224 (199203)  
 ADT US 1989-455562 19891221; US 5075210 A US 1989-455580 19891221  
 PRAI US 1989-455562 19891221; US 1989-455580 19891221  
 AB WO 9109520 A UPAB: 19930928  
 Cardioplegia preservation soln. suitable for long-term preservation of the heart for transplantation comprises: (i) pyruvate; (ii) inorganic salts providing ions to retain the heart cell action potential across the membrane; (iii) a protein selected from albumin, foetal calf serum, or other protein providing viscosity similar to albumin; and opt. (iv) ethanol.  
 Also claimed is an organ preservation soln. suitable for longterm preservation of liver, kidney, spleen, heart-lung, pancreas, cartilage, skin and cornea for transplantation comprising (i)-(iii) as above. Preservation of the heart for transplantation comprises first perfusion of the heart with cardioplegia soln. contg. pyruvate at 37 deg.C, followed with a perfusion of the heart with a cardioplegia soln. contg. pyruvate and EtOH at 4-37 deg.C and storing the heart in a cardioplegia soln. contg. pyruvate at 2-10 deg.C. X  
 Also claimed is method for organ preservation comprising perfusion of the organ with a first preservation soln. consisting of (i) and (ii) at 37 deg.C, followed by perfusion with a second soln. consisting (i), (iv) and (iii) at 4-37 deg.C and storing the organ in the first soln. at 2-10 deg.C.  
 ADVANTAGE - The first preservative soln. contains pyruvate in order to vasodilate, remove blood, increase flow, and load the cells with an energy supply in the form of a clean substrate. Pyruvate prevents oedema, ischaemia, calcium overload and acidosis. Also helps preserve the action potential across the cell membrane. @ (49pp Dwg.No.0/6)  
 L5 ANSWER 147 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1991-136874 [19] WPIDS  
 DNC C1991-059082  
 TI Appts. to preserve internal organs - has temp. control unit to control temp. of coolant or perfusate based on output of 2nd detector and set value.  
 DC D22  
 PA (OLYU) OLYMPUS OPTICAL CO LTD  
 CYC 1  
 PI JP 03074302 A 19910328 (199119)\*  
 ADT JP 03074302 A JP 1989-209634 19890815  
 PRAI JP 1989-209634 19890815  
 AB JP 03074302 A UPAB: 19930928  
 Appts. comprises a temp. control unit to control the temp. of a coolant or perfusate according to the difference between the output of a 2nd temp. detector to detect the temp. of the coolant to adjust the temp. of the perfusate and set value.  
 USE - For transplanting hearts/kidneys.  
 0/5  
 L5 ANSWER 149 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1990-189678 [25] WPIDS  
 DNC C1990-082256  
 TI Appts. to preserve internal organ removed from patient - comprises sensor to detect organ-preserving unit being turned down, and liq. control unit to limit perfusate fed into preserving unit.  
 DC D22

- PA (OLYU) OLYMPUS OPTICAL CO LTD  
CYC 1  
PI JP 02124801 A 19900514 (199025)\*  
ADT JP 02124801 A JP 1988-274578 19881101  
PRAI JP 1988-274578 19881101  
AB JP 02124801 A UPAB: 19930928  
Appts. to preserve internal organ removed from patient comprises a sensor to detect an internal-organ preserving unit being turned down, and liq. control unit to limit a perfusate from being fed into the organ preserving unit when a signal is received from the sensor.  
USE - For transplanting kidneys.
- 0/9
- L5 ANSWER 151 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1990-119647 [16] WPIDS  
DNC C1990-052659  
TI Appts. to preserve internal organ at low temp. for transplants - comprises low-temp. storage chamber and perfusate flow circuit with control unit and power source.
- DC D22  
PA (OLYU) OLYMPUS OPTICAL CO LTD  
CYC 1  
PI JP 02069401 A 19900308 (199016)\*  
ADT JP 02069401 A JP 1988-220454 19880905  
PRAI JP 1988-220454 19880905  
AB JP 02069401 A UPAB: 19930928  
Appts. comprises a low temp. hold unit composed of an internal-organ store chamber and perfusate flow circuit, control unit to control the flow of the perfusate in the circuit and power source for these units.  
USE - For transplanting internal organs.
- 0/6
- L5 ANSWER 158 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1989-189463 [26] WPIDS  
DNC C1989-083923  
TI Appts. to preserve internal organs from living body - comprises cooling unit with unit for storing internal organ connected to perfusate circuit.
- DC D22  
PA (OLYU) OLYMPUS OPTICAL CO LTD  
CYC 1  
PI JP 01128901 A 19890522 (198926)\* 6P  
ADT JP 01128901 A JP 1987-287239 19871116  
PRAI JP 1987-287239 19871116  
AB JP 01128901 A UPAB: 19930923  
Appts. comprises a cooling unit having an internal-organ preserving chamber connected to a perfusate circuit with a perfusate flow control unit.  
USE - For transplanting hearts or kidneys into patients.
- L5 ANSWER 168 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1985-247957 [40] WPIDS  
DNN N1985-185322 DNC C1985-107733  
TI Organ-damage determn. - by adding fluorescein to perfusion medium and fluorescence intensity determn. in outflowing perfusate.
- DC B04 P31  
IN DVORTSEVOI, V K; LUGOVOI, V I; PUSHKAR, N S  
PA (AUCR-R) AS UKR CRYOBIOL MED  
CYC 1  
PI SU 1146000 A 19850323 (198540)\* 3P  
ADT SU 1146000 A SU 1983-3594979 19830311

PRAI SU 1983-3594979 19830311

AB SU 1146000 A UPAB: 19930925

According to the proposed method, fluorescein diacetate in concn. of 10-1000 to the power of minus 8M is added to the perfusate. The intensity of fluorescence in the perfusate, flowing back from the organ, shows the degree of damage of the organ.

In the 1st series of experiments, rabbit kidneys were used with 5 minutes of ischaemia; in the 2nd - 30 minutes, and in the 3rd, 60 minutes of ischaemia. Six kidneys were used in each series.

Henks' soln. was used as the perfusion medium, to which fluorescein diacetate was added. Fluorescence did not alter with 5-minute ischaemia. Fluorescence intensity rose to 1.5 times after 30 minutes of ischaemia, and to twice the original value, after 60 mins.

USE/ADVANTAGE - Determn. of functional condition of organs during their preservation, and directly before transplantation.

Simplifies the determn. of the degree of damage. Bul.11/23.3.85

0/0

L5 ANSWER 169 OF 197 WPIDS (C) 2003 THOMSON DERWENT

AN 1985-120187 [20] WPIDS

DNC C1985-052317

TI Preservation of removed human organ for transplanting  
- by injecting isotonic perfusion liq. with cooling followed by antifreeze with further chilling.

DC D22

PA (HKUS) HOKUSAN KK

CYC 1

PI JP 60061503 A 19850409 (198520)\* 4p

JP 61056202 B 19861201 (198652)

ADT JP 60061503 A JP 1983-170190 19830914

PRAI JP 1983-170190 19830914

AB JP 60061503 A UPAB: 19930925  
An isotonic perfusion liq. (I) e.g. Collins soln. is injected into the artery or a portal vein of a removed human organ; the temp. of (I) is gradually chilled during injection and the injection is continued until the temp. approaches the freezing pt. of (I). An antifreeze perfusion liquid (II) (e.g. MDSO, glycerol) is then injected, its temp. is lowered gradually from the freezing pt. of (I) to that of (II), and the frozen organ is stored. The procedure is reversed before transplantation of the organ.

USE/ADVANTAGE - Allows freezing of removed organ with no destruction of cells and extends storage life.

0/0

L5 ANSWER 170 OF 197 WPIDS (C) 2003 THOMSON DERWENT

AN 1985-120185 [20] WPIDS

DNC C1985-052315

TI Preservation of removed human organs for transplantation  
- by perfusion with chilled isotonic agent and anticoagulant then with anti-freeze with cooling.

DC D22

PA (HKUS) HOKUSAN KK

CYC 1

PI JP 60061501 A 19850409 (198520)\* 5p

JP 61056201 B 19861201 (198652)

ADT JP 60061501 A JP 1983-170188 19830914

PRAI JP 1983-170188 19830914

AB JP 60061501 A UPAB: 19930925  
A mixt. of an isotonic perfusion liq. (e.g. physiological saline and collins soln.) and an anti-coagulant (e.g. heparin) is injected into the artery or a portal vein of a removed human organ and discharged from a vein, at a temp. slightly higher than the freezing pt. of the liq. An anti-freeze (e.g. glycerol) is then injected while further chilling gradually to a temp. slightly higher than the freezing pt. of the

anti-freeze, and the organs stored at that temp. The process is reversed to use the organ for transplantation.  
USE/ADVANTAGE - Allows freezing of removed organs with no destruction of cells and extends storage life.  
0/1

L5 ANSWER 171 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1985-025737 [05] WPIDS  
TI Appts. for perfusion and cooling of transplanted organs - NoAbstract.  
DC P31  
PA (REHA-I) REHAK J  
CYC 1  
PI CS 8402370 A 19841119 (198505)\* 8p  
PRAI CS 1984-2370 19840329

L5 ANSWER 172 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1985-006826 [02] WPIDS  
DNN N1985-004668  
TI Arrangement for constant pressure perfusion - has pressure regulator and overflow situated between pump and organ.

DC P34  
IN SEEMANN, B  
PA (UYRO-N) PIECK-UNIV ROSTOCK  
CYC 1  
PI DD 213134 A 19840905 (198502)\*  
ADT DD 213134 A DD 1983-247523 19830127  
PRAI DD 1983-247523 19830127  
AB DD 213134 A UPAB: 19930925  
The device provides a constant pressure of perfusion or if pressure exceeds a set limit the perfusion is ended. Between the pump, which has the desired pressure characteristics and the necessary output, and the organ, is situated a pressure regulator which allows so much fluid into the organ that the required pressure is reached. Excessive fluid is fed away.  
USE - For maintaining constant perfusion pressure on an organ to be used in surgical transplantation. X

L5 ANSWER 174 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1984-150885 [24] WPIDS  
DNN N1984-112260  
TI Body organs preservation unit - has fluid pumped from arterial reservoir via high-low temp. heat exchangers and regulator to chamber.  
DC P34 S05  
IN AKHTIN, V M; LYUBARKAY, Z V; MONAKHOV, Y U I  
PA (LEEE) LENGD ELECTROTECH RES  
CYC 1  
PI SU 1044290 A 19830930 (198424)\* 3p  
ADT SU 1044290 A SU 1981-3296539 19810528  
PRAI SU 1981-3296539 19810528  
AB SU 1044290 A UPAB: 19930925  
Unit e.g. for preserving human and animal organs by the perfusion method prior to transplantation has an organ temp. regulation system with and heat-carrier flow regulators and controller to simplifier the construction. The perfusion material is pumped from the arterial reservoir (2) - by pump (3) - via produce connected high-temp. and low temp. heat exchangers (5, 6) and regulator (14) is preserved organ vessels and via pump (4) - to the internal region or chamber (1). The flow, passing via heat-exchanger (5) is heated via heater (11) and the flow, passing via heat exchange (6) is cooled via cooler (13). Control system (10, 12) maintain a constant temp. across the heat-exchangers (5, 6) at a set level, monitored via the measurement temp. converters (8, 9) independent of the disturbing action. Bul.36/30.09.83.

LS ANSWER 175 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1984-001362 [01] WPIDS  
 DNC C1984-000372  
 TI Preservation of organ excised from human body - by  
     perfusing organ with different liquids while cooling  
     organ to freezing temp..  
 DC D22 Q74  
 IN KURAOKA, Y; SAKAO, N  
 PA (HKUS) HOKUSAN KK; (HKUS) HOXAN KK  
 CYC 10  
 PI EP 96997 A 19831228 (198401)\* EN 21p  
     R: CH DE FR GB LI NL SE  
     JP 58213701 A 19831212 (198404)  
     US 4462215 A 19840731 (198433)  
     JP 59184101 A 19841019 (198448)  
     US 4494385 A 19850122 (198506)  
     CA 1200507 A 19860211 (198611)  
     EP 96997 B 19860924 (198639) EN  
     R: CH DE FR GB LI NL SE  
     DE 3366419 G 19861030 (198645)  
     JP 61055881 B 19861129 (198652)  
     JP 61055882 B 19861129 (198652)  
 ADT EP 96997 A EP 1983-303133 19830601; JP 58213701 A JP 1982-95896 19820604;  
     US 4462215 A US 1983-499220 19830531; JP 59184101 A JP 1983-56593  
     19830331; US 4494385 A US 1984-615212 19840520  
 PRAI JP 1982-95896 19820604; JP 1983-56593 19830331  
 AB EP 96997 A UPAB: 19930925

Organ is preserved by injecting blood uniformly  
 perfusing liquid such as choline from an artery or portal vein  
 while lowering its temp., and exhausting it from the vein, the cooling  
 continuing until the liquid is lowered to the first proximity lowering  
 temp. before its solidifying temp. The organ is then perfused  
 with refrigerant defect preventing agent such as DMSO or glycerin and the  
 temp. lowered until the agent becomes the second proximity lowering temp.  
 before its solidifying temp. Finally the organ is perfused with  
 a low solidifying temp. liquid, such as alcohol or ether, and the temp.  
 lowered until the liquid reaches the third proximity lowering temp. before  
 its solidifying temp. or until the liquid is frozen and the organ  
 thus obt. is preserved in its frozen state.

Used for preserving an organ for transplant. The  
 organ is preserved semipermanently without cell necrocytosis  
 occurring.

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LS ANSWER 180 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
 AN 1982-551696 [27] WPIDS  
 TI Soin. for protecting organs against ischaemic damage - contains  
     alpha keto glutarate, histidine, histidine hydrochloride and tryptophan.  
 DC B05 D22  
 IN BRETSCHNEI, H J  
 PA (KOHG) KOEHLER CHEMIE GMBH FRANZ  
 CYC 12  
 PI EP 54635 A 19820630 (198227)\* DE 15p  
     R: AT BE CH DE FR GB IT LI NL SE  
     US 4415556 A 19831115 (198348)  
     CA 1170994 A 19840717 (198433)  
     EP 54635 B 19850213 (198507) DE  
     R: AT BE CH DE FR GB IT LI NL SE  
     DE 3168925 G 19850328 (198514)  
 ADT EP 54635 A EP 1981-108101 19811009  
 PRAI CH 1980-9510 19801223  
 AB EP 54635 A UPAB: 19930915

Protective soln. for preventing ischaemic damage to heart and kidneys as well as other during surgery and organ transplantation, contains alpha-ketoglutarate (I) and a buffer based on histidine-histidine hydro-chloride and tryptophan. It also contains electrolytes usually present in cardioplegic solns., specifically K and Mg ions, and opt. also a polyol or sugar.

A claimed soln. contains, mmoles per L, Na or K hydrogen alpha-ketoglutarate 1-7; NaCl 7-23; KCl 2-18; MgCl<sub>2</sub> 8-12; Try 1-3; His 50-250; HisHCl 5-27; mannitol 0-100; ribose 0-100 and inosine 0-100. Its has osmolarity 300-350 mosmoles and pH 6.8-7.4.

The addn. of (I) significantly improves the effect of the soln., esp. it improves aerobic metabolism during perfusion with the soln. without increasing the organ's basal metabolism. The addn. of Li ions is no longer necessary.

LS ANSWER 186 OF 197 WPIDS (C) 2003 THOMSON DERWENT  
AN 1980-12580C [07] WPIDS  
TI Portable perfusion system for organ preservation - has interchangeable cassette for holding organ.  
DC D22 P31  
IN TOLEDO PERE, L H  
PA (FORD-N) FORD HOSPITAL HENRY  
CYC 2  
PI US 4186565 A 19800205 (198007)\*  
CA 1129293 A 19820810 (198235)  
PRAI US 1978-907878 19780519  
AB US 4186565 A UPAB: 19930902

Portable perfusion system for preservation of organs, esp. kidneys for transplantation, comprises a cart on which a refrigeration unit, pump and cassette are mounted with the pump and cassette being removable for separate transport. The cassette has an organ receptacle, a heat exchanger, a membrane oxygenator, a bubble trap and an ice deposit area.

The heat exchanger is connected to the refrigeration unit and the perfusate is pumped through the heat exchanger to the bubble trap and, in turn, to the organ. An O<sub>2</sub> supply on the cart supplies O<sub>2</sub> to the membrane oxygenator which oxygenates the perfusate.

Portable system with a cassette which can be removed for interchange with other systems.

=> d his

(FILE 'HOME' ENTERED AT 12:42:06 ON 09 APR 2003)

FILE 'WPIDS' ENTERED AT 12:42:14 ON 09 APR 2003

L1 25991 S ORGAN  
L2 16342 S TRANSPLANT?  
L3 2948 S PERfusion OR PERfuse  
L4 3043 S PERfusing OR L3  
L5 197 S L1 AND L2 AND L4

=> log hold  
COST IN U.S. DOLLARS  
FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
256.54	256.75

SESSION WILL BE HELD FOR 60 MINUTES  
STN INTERNATIONAL SESSION SUSPENDED AT 13:06:37 ON 09 APR 2003